www.absolent.com

US

CA

User's manual

Oil mist and Oil smoke filter

- ODR 2000
- ODR 3000
- ODR 9000

Absolent

ODR

1. BASIC INFORMATION

Read and understand the user's manual before beginning to work in the filter unit.

1.1 Introduction

In the following documentation you will find all essential information concerning safety, installation, start-up and maintenance.

This product is manufactured and designed in accordance with the EU directives that this product is embraced by.
In order to maintain this status, installation, repair and maintenance may only be carried out by qualified personnel and the use of original spare parts.
For advice regarding technical service or the need of spare parts please contact Absolent AB or your closest accredited dealer. Contact information can be found under the heading "Technical Support".

1.2 Range of Application

The filter unit ODR is only designed to clean oil-contaminated air. Other use of the filter unit is prohibited, except where the manufacturer guarantees the function.

1.3 Table of Contents:

1.3 Table of Contents, cont.

US CA DECLARATION OF CONFORMITY-EG/UL/CSA

Absolent AB declares under sole responsibility that the product **ODR** embraced by this declaration of conformity corresponds with the following standards or other provisions:

Machinery directive:	98/37/EC
EMC directive:	89/336/EEC including annexes 93/31/EEC and 93/68/EEC
LVD directive:	73/23/EEC including annex 93/68/EEC

All filter units are equipped with UL approved electrical components. ODR Central filter without control equipment and pump are also CSA approved.

CSA approval applies only to the ODR Basic

Absolent

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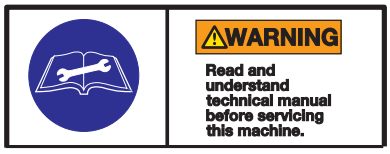
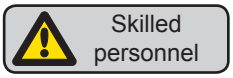
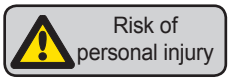
Tony Landh, CEO

2006-03-15

US CA 3. LIST - WARNING SIGNS

	**Warning - Read the instructions** Read and understand the user guide before working on the filter unit. The sign is positioned on the right-hand side of the filter unit.
	**Warning - Dangerous voltage** All electrical work must be carried out by qualified electricians. The sign is located next to the control cabinet.
	**Warning - Tip risk** The filter unit has a high centre of gravity and with that a risk of tipping. In order to avoid personal injury, see the lifting instructions under the heading “Transport/Set up”. This sign is placed on the packaging and on the right-hand side of the filter unit.
	**Warning - Rotating parts** Caution - the filter unit/ and pump can be started by the timer, remote control or by a connected processing machine. The sign is positioned on the right-hand side of the filter unit.
	**Warning - Risk of injury** Caution the filter unit can contain fluids dangerous to health. Refer to the product sheet for the fluids in question before handling. The sign is positioned on the right hand side of the filter unit.
	**Danger - Heavy products** The filter cassettes become heavier with use. Check the current weight of the filter cassette before handling. Weight details can be found on the filter cassette’s rating plate and under the heading 11 “ Handling the filter cassettes”.

US CA 4. SAFETY PRECAUTIONS

Type of warning	Warning text
	**Warning - Hazardous voltage!** The filter unit works with a high electrical voltage. The electrical installation must be performed by qualified electricians. Disconnect the power supply to the filter unit before it is opened and/or before starting work on the filter unit.
	Warning - Do not connect the filter unit to explosive gases! Do not connect the filter unit to processing machines that can bring about an explosion risk. Furthermore, the filter unit must not be connected to media that are highly inflammable without preventative measures being taken to stop the spread of the explosion or fire to the filter unit.
	**Caution - Read and understand the user's manual!** Read and understand the user guide before working on the filter unit.
	Caution - Qualified personnel only! All work concerning transport, installation and maintenance must be performed by qualified personnel.
	**Risk of trapping injury!** Do not insert your hand into the filter unit when the fan is running. Do not wear loosely hanging clothing near the fan when operational. These can be sucked into the fan or get caught.
	Risk of tipping over! Always check the weight of the filter unit (technical data, heading 7) before lifting. When equipped with an integrated fan assembly the centre of gravity of the filter unit is relatively high. When transporting the filter unit, secure well - an alternative can be to transport the filter unit horizontally.
	Heavy products! Filter cassettes are heavy. Check the current weight of the filter cassette before handling. Weight details can be found on the filter cassette's rating plate and under heading 11 "Handling the filter cassettes". Lifting equipment or the like must be used during service and inspection work above the ground.
	Risk of slipping! Keep the floor clean. Remove oil spill to prevent injury due to slipping.
	High noise levels! If the sound level at the control panel/workplace exceeds 75 dB(A) ear protection must be worn.
	Dangerous fluids! Use requisite personal safety equipment with all types of service work, as the filter unit can contain liquids dangerous to health. Refer to the product sheet for the liquids in question before handling.
	Caution when recirculating air back into the building! Note that in its standard design the filter unit does not separate gas molecules.

US CA 5. TRANSPORT / SET UP

5.1 General

Check that the unit is undamaged on arrival and when unpacking. Contact the carrier in the event of transport damage.

5.2 Transport and delivery

The filter unit is supplied lying down in a wooden crate. The packaging should remain on the filter unit up until installation in order to prevent damage. Secure the filter firmly, or transport the filter horizontally. One of the following methods must be used when lifting:

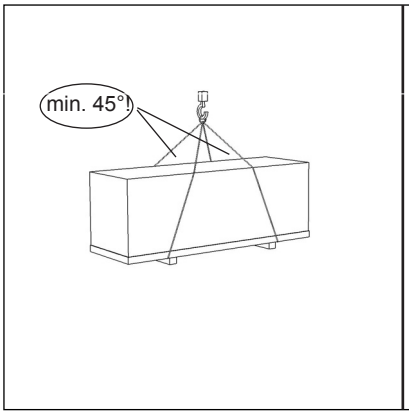


Fig.1: Lifting the filter unit on a wooden pallet with an overhead crane.

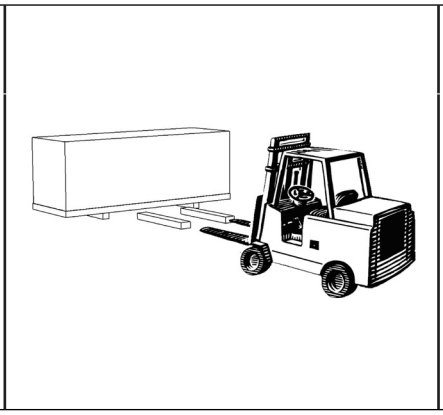


Fig.2: Lifting the filter unit on a wooden pallet with a forklift truck.

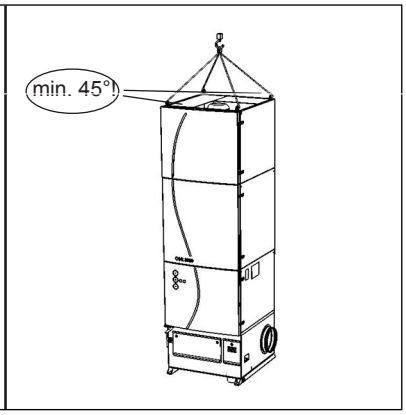


Fig.3: Lifting a vertical filter unit using a forklift truck or overhead crane.

5.3 Set up

The filter unit must be set up on a flat and firm surface. The surface must be designed to support the weight of the filter unit. When setting up the filter unit, ducts, pipes, and electrical cables, ensure that the service doors can be opened freely (see fig. 4) and that internal components such as the filter cassettes can be removed as required.

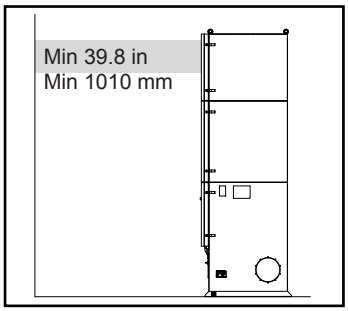


Fig.4

5.3.1 Lift to the vertical position

1. Ensure that the toggle fasteners on the service doors are secured , before the filter unit is lifted to a vertical position.
2. When the filter is to be raised, fit the lifting device in the two lifting eyes, as shown in fig. 5. ODR 2000: Screw in the two lifting eyes in the front holes on top of the filter unit. Carefully lift the unit as shown in fig. 6.
   NB: The cords have to be long enough to form an angle of a minimum of 45° between cord and filter unit.
3. Position the filter unit in the correct position and bolt to the floor.
4. Open the door and check that the filter cassettes are properly secured, i.e. that the sealing is compressed to approx. 0.12 in / 3 mm. If a filter cassette has become loose during transport, secure them and close the service doors.
   (How to secure, se heading 11.2 resp. 11.3.)
7. Connect the drainage.
8. Connect the suction pipe with a control damper. When a branch pipe is used, the recommended connection is a 30° elbow, as this gives a low pressure drop for the entire installation.
9. Connect the unit electrically (possible fan, pump and/or other accessories). Also see heading 8 “Electrical connection”.

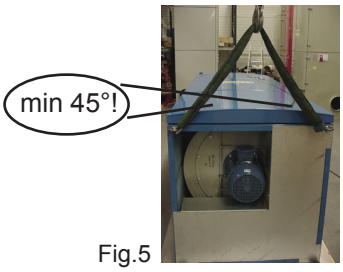


Fig.5

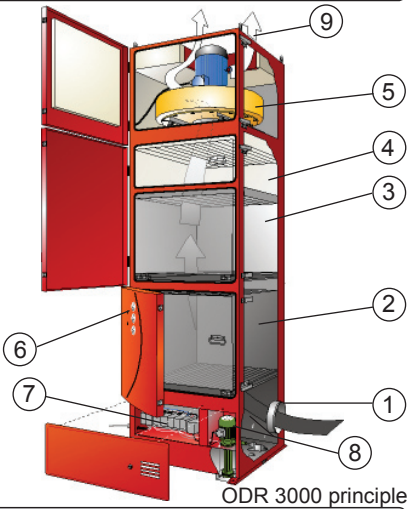
Fig.6

US CA 6. OPERATION / DESIGN

ODR

Contaminated air is sucked into the inlet (1) in the lower section of the filter unit and passes through filter stage 1 (2), where the majority of the oil particles are trapped. When filter stage 1 unit reaches a state of saturation, the oil drops that have been caught drain down into the bottom of the filter, which acts as a collection container and are pumped (8)(accessory) or drained away. The air passes through an additional Absolent filter (3), where the remaining bigger particles are filtered out and on via a HEPA filter (4) to the external fan. Generally the air is now so clean it can be returned directly to the premises.

1. Inlet, pipe connection
2. Filter stage 1 (Absolent)
3. Filter stage 2 (Absolent)
4. HEPA filter
5. Fan
6. Pressure gauges
7. Control cabinet (not illustrated, accessory)
8. Return oil tank & pump (accessory)
9. Outlet

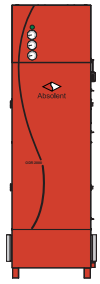


ODR 3000 principle

US CA 7. TECHNICAL DETAILS ODR

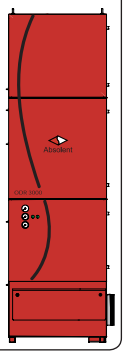
ODR 2000

ODR 2000 with integrated fan.



ODR 3000

ODR 3000 with integrated fan.



ODR 9000

ODR 9000 with side outlet and external fan.

	ODR 2000	ODR 3000	ODR 9000
Height, centred outlet [in/mm]	95.3 / 2420	137.2 / 3485	145.0 / 3682
Height, side outlet [in/mm]	-	-	154.8 / 3932
Width, excl. pump case [in/mm] (with pump case + 3.15 in / 80 mm)	27.6 / 700	39.8 / 1010	130.5 / 3314
Depth [in/mm]	30.7 / 780	44.3 / 1125	44.3 / 1125
Standard connection inlet [in/mm]	Ø 7.9 / 200	Ø12.4 / 315	Ø 19.7 / 500
Standard connection outlet [in/mm]	-	-	Ø 24.8 / 630
Standard connection return oil [in]	W 1 1/4”	W 3/4”[1)]	W 3/4”[1)]
Weight filter unit with dry filter cassettes [lbs/kg]	11.8 / 300	2205 / 1000	5733 / 2600
Available dim. external pressure drop [Pa]	430	300	-
Filter cassettes			
Absolent filter [pc]	2	2	6
HEPA (H13) [pc]	1	1	3
Performance			
Max. air flow [cfm / m³/h]	1180 / 2000	2350 / 4000	7050 / 12000
Sound level (118 in / 3 m in front of filter unit) [dB(A)]	60	67	[2)]

[1)] All filter units without pump have a nom. pipe size W 1 1/4” return oil connection.
[2)] The level of sound emitted from the filter units with external fan is specified in the user’s manual for the fan.
For the electrical data, see the wiring diagram in heading 8. A wiring diagram is even included in the control cabinet.

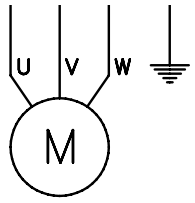
US CA 8. ELECTRICAL CONNECTION

Warning - Dangerous voltage
All electrical work must be carried out by qualified electricians.

8.1 General

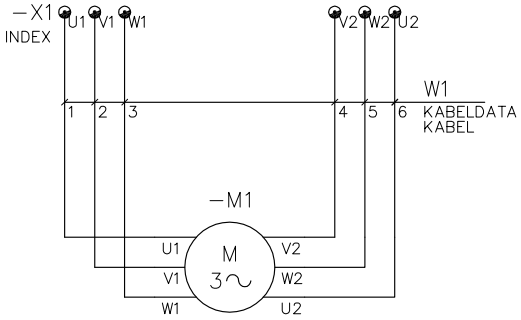
The Absolent filter units are standardly equipped with wired cables from the fan to the terminal blocks on the side of the filter unit. For the warranty to apply, a qualified person must carry out all the electrical wiring in accordance with local regulations. If the filter unit is equipped with extra electrical equipment, this equipment shall be wired according to the wiring diagram supplied.
The Absolent oil mist and oil smoke filter unit can be customized to meet your needs. The range of accessories includes starting equipment and other electrical periphery equipment. The most common accessories are described under the heading ”Accessories”.

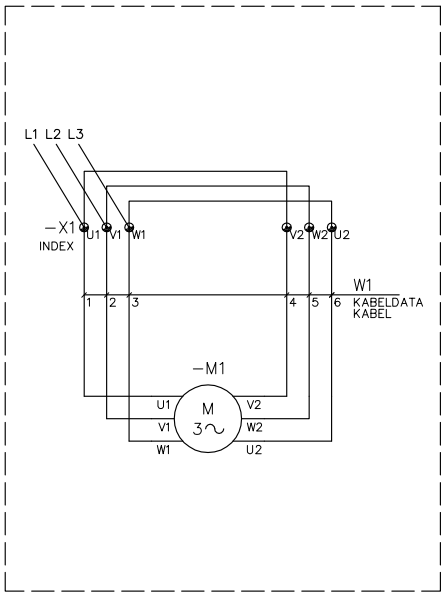
8.2 Electrical connection of fan motor - ODR 2000



Fan motor:
(US) ODR 2000 = 3.5 hp - 4.6A (440V-60Hz)
(CA) ODR 2000 = 2.6 kW - 4.6A (440V-60Hz)

8.3 Electrical connection of fan motor - ODR 3000 Basic





Fan motor:
ODR 3000 BASIC:
(US) 11.5 hp; 12.4A (440V-60Hz)
(CA) 8.5 kW; 12.4A (440V-60Hz)

Electrical data can be read from the rating plate on the right-hand side of the filter unit.

Risk of trapping injury!
Do not insert your hand into the filter unit when the fan is running. Do not wear loosely hanging clothing near the fan when operational. These can be sucked into the fan or get caught.

8.4 Checking the fan’s direction of rotation

Make sure that the fan impeller rotates in the correct direction (counter-clockwise viewed from the motor side). If you are unable to see the motor while the impeller is rotating, start the fan, read the pressure drop across the filters from the pressure gauge, stop the fan, transpose two phase leads, restart the fan and read the pressure drop again. The connection that gave the highest pressure drop is the correct one.

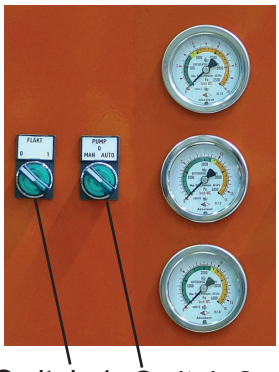
US CA 8. ELECTRICAL CONNECTION cont.

8.5 Electrical connection of ODR 3000 with control cabinet

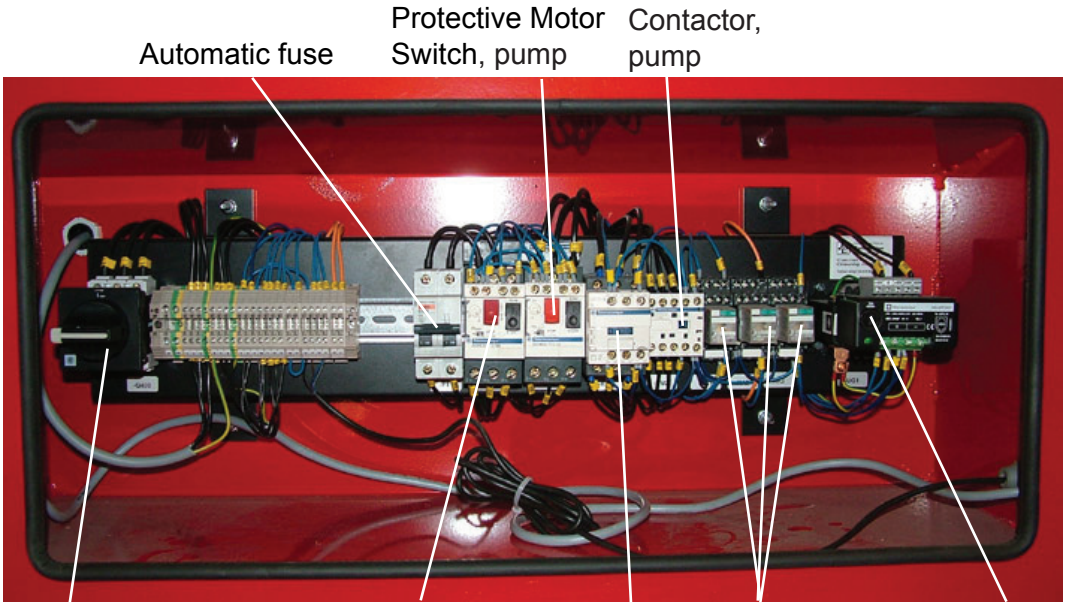
The Absolent ODR 3000 is standardly equipped with a control cabinet for fan and oil return pump. The wiring diagram is located inside the control cabinet.
For the warranty to apply, all electrical connections must be carried out by a qualified electrician and in accordance with applicable directives. If the filter unit is fitted with other electrical equipment; that equipment must be wired according to the wiring diagrams applicable to that supply.

8.5.1 Function of control cabinet - Absolent ODR 3000

The control unit controls the fan and the oil pump.
To start the fan, set switch 1 on the outside of the door at position 1. To start the pump, set switch 2 on the outside of the door at position Aut. The pump is thereby controled by the level sensor. To operate the pump manually, set switch 2 on the outside of the door at position 1. The LEDs in switch 1 and 2 indicate that the fan resp. pump are operating.



8.5.2 Components of control cabinet - Absolent ODR 3000



8.6 Level sensor

The level sensor and the pump are situated on the same lid behind the blend at the lower front of the unit. The sensor has two floats with the following functions:
1. The lower float in its lowest position = pump shut off.
2. The lower float in its uppermost position = pump starts.
3. The upper float in its uppermost position = electrical signal is generated that can be used for alarm purposes, i.e. customer specific.

US CA 9. FIRST START OF THE FILTER UNIT

9.1 General

The following functions must be checked when starting the filter unit for the first time:

- Control cabinet
- The fan's direction of rotation
- Air flow
- Pressure drop over the filter cassettes
- Check that filter cassettes are properly tightened.
- Check that any accessories are connected and activated.

These checking points also apply for a restart of the filter after a longer standstill. How to proceed when checking, see below.

Risk of trapping injury!
Do not insert your hand into the filter unit when the fan is running. Do not wear loosely hanging clothing near the fan when operational. These can be sucked into the fan or get caught.

9.2 Important parameters to check when starting for the first time

9.2.1 Control cabinet

Open the lid of the control cabinet. Check that the protective motor switches for fan and pump are activated. The black buttons have to be pressed in (see photo under 8.5.2). Check that the fuses for the transformer are switched on. Switch on the power supply to the control unit by turning the safety isolating switch to position ”1”.

9.2.2 The fan's direction of rotation

Make sure that the fan impeller rotates in the proper direction (counter-clockwise viewed from the motor side). If you are unable to see the motor while the impeller is rotating, start the fan, read the pressure drop across the filters from the pressure gauge, stop the fan, transpose two phase leads, restart the fan and read the pressure drop again. The connection that gave the highest pressure drop is the correct one.

9.2.3 Air flow

The air flow must be checked, so that the value does not exceed the design level for the installation (refer to the quote or unless otherwise stated the nominal flow under heading “Technical data ODR”). The air flow can be adjusted with the damper or frequency converter, if fitted. If it is difficult to reach the required flow, check the direction of rotation of the fan motor according to 9.2.2. If the unit is run with a too high flow, there is a large risk that the life span of the filter cassettes will be shortened.

9.2.4 Pressure drop over the filter cassettes

Read and note down the values on the pressure gauges on the different filter stages (heading 10).
These values can then be used as a basic value to assess the pressure increase /life span of the different filter cassettes.

9.2.5 Check that the filter cassettes are properly secured.

Open the door and check that the filter cassettes are properly secured, i.e. that the sealing is compressed to approx. 0.12 in / 3 mm. How to secure, se headings 11.2 resp. 11.3.

9.2.6 Return oil pump

Check that the pump starts, preferably by lifting the floats on the level sensor (see 8.6).

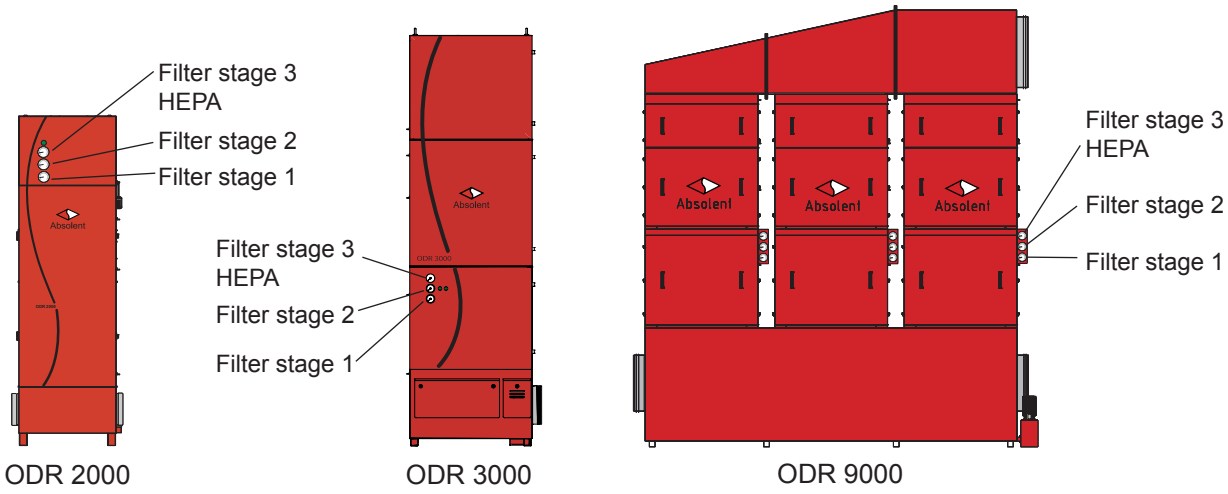
9.2.7 Spray system

If the filter unit is equipped with a spray system its function must be checked as this has a large effect on the life span of the filter cassettes.
The function of the spray system and fault tracing are described in the separate user guide.

US CA 10. SERVICE / MAINTENANCE

10.1 General

Preventive maintenance and regular service extend the life span and ensure that the filter unit maintains its performance.
To facilitate inspection of the filter cassette status, Absolent supplies pressure gauges for each filter stage as standard equipment. These are positioned on the front of the filter unit as shown in the diagram below:



ODR 2000 ODR 3000 ODR 9000

The pressure gauges are graduated in [Pa] and contain green, yellow and orange sectors. The filter cassette is to be replaced when its pressure gauge has reached the orange sector. The yellow sector is a warning that the filter cassette replacement is to be planned. For service support contact your local Absolent dealer.

If the filter stage is used with the pressure drop within the orange sector, the filter unit gives a reduced air volume.

Note however, that the filter unit will not be damaged when operated with a clogged filter stage, but the required air flow will not be attained. Handling during service is described under “Changing the filter, 11.3”.

10.2 Service schedule

Action	Monthly	Six monthly	Annually
Filter cassettes Establish filter cassette status by reading each pressure gauge	X[1)]		
Bottom section / Drainage Check that the return oil pipe is not blocked	X[2)]	X[2)]	
Fan Check taht there is no abnormal noise or vibration			X

[1)] In order to get to know your new installation, the filter cassettes should be checked once a month during the first six months the filter unit is in use. The service interval is then adapted according to the installation in question. However, no longer than six months between inspections. Note that when the pressure drop enters the yellow sector, the inspection interval must be increased as the pressure drop now increases quicklier.

[2)] In order to get to know your new installation, the bottom section and drainage should be checked once a month during the first six months the filter unit is in use. The service interval is then adapted according to the installation in question.

US CA 11. HANDLING THE FILTER CASSETTES

Warning!
Use requisite personal protection equipment when performing service work on the filter unit.
Lifts or the like must be used when carrying out service work above the ground.

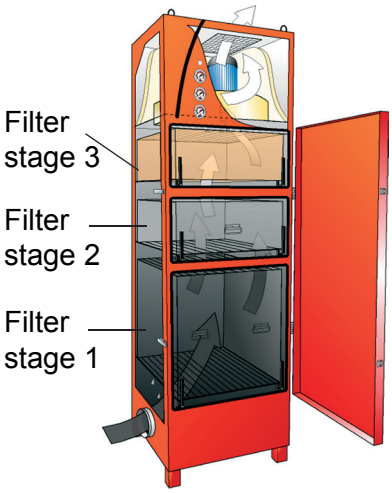
11.1 General

Filter cassettes are heavy, especially when filled with fluid after a period of use. Below is a table of weight for the different filter cassettes available. The type designation of the supplied filter cassette can be found on the rating plate located on the front of the filter cassette.

Filter type	Filter cassette typ	Weight new cassette (dry)	Weight fluid filled cassette
ODR 2000	Stage 1: S1/650	176 lb	265 lb
	Stage 2: S3B3/650	55 lb	110 lb
	Stage 3: HEPA TRSA-N 990 595x292	26 lb	35 lb
ODR 3000 and	Stage 1: S1/914	342 lb	463 lb
ODR 9000	Stage 2: S10B3/914 alt S10/914	342 lb	463 lb
	Stage 3: HEPA TRSA 1D-N 1000x914	60 lb	82 lb

11.2 Instruction for replacing the filter cassettes - ODR 2000

1. Read and note down the values on the pressure gauges on the different filter stages when it is in operation.
   The filter cassettes whose pressure gauges have reached the orange sector have to be replaced.
2. Shut down the fan and disconnect the filter unit from electricity.
3. Open the service door.
4. Loosen the cassette by releasing the two bolts (fig. 1).
5. Lift out the filter cassettes (fig. 2) that show a pressure drop which exceeds the service level according to “Care and maintenance”. When replacing Filter stage 1, check and remove any dirt from the bottom of the filter unit.
6. Check that the sealing strip is undamaged before the new filter cassette is slid in (fig. 3). The sealing strip must be seated upward.
7. Secure the filter cassette (fig. 4).
8. Connect the filter unit to electricity
9. Start the fan and check the pressure drop by reading the pressure gauges. They should be in the green sector.



ODR 2000

Fig.1

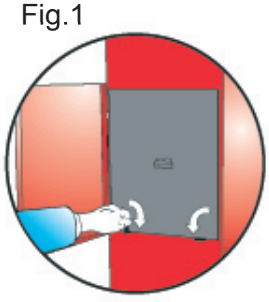
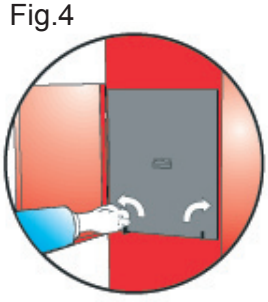


Fig.2

Fig.3

Fig.4



US CA 11. HANDLING OF FILTER CASSETTES cont.

11.3 Instruction for replacing the filter cassettes - ODR3000 and ODR 9000

1. Read and note down the values on the pressure gauges on the different filter stages when it is in operation. The filter cassettes whose pressure gauges have reached the orange sector have to be replaced.
2. Shut down the fan.
3. Disconnect the filter unit from electricity.
4. Open the service door.
5. Change the filter cassette following the instruction below.

a. Filter stage 1 and 2, ODR 3000 and ODR 9000

i. Loosen the cassette by releasing the two bolts (fig. 1).
ii. Withdraw the filter cassette with the aid of the Absolent filter sledge (accessory) or a pallet and forklift, view fig. 2. Be carefull, as the filter cassette is very heavy and possibly slippery with oil!
iii. Check that the sealing strip is undamaged on the new filter cassette.
iv. Lift the new filter cassette upp with the sealing strip upward and push it all the way into the filter housing (view fig. 3).
v. Secure the filter cassette by tightening the two bolts (fig. 4). The filter cassette is to be thightened until the sealing strip is compressed to a thickness of about 0.12 inches / 3 mm.

b. HEPA filter (filter stage 3), ODR 3000 and ODR 9000

i. Loosen the cassette by releasing the two bolts (fig. 1).
ii. Withdraw the filter cassette.
iii. Check that the sealing strip is undamaged on the new filter cassette.
iv. Lift the new filter cassette upp with the sealing strip upward and push it all the way into the filter housing (view fig. 3).
v. Secure the filter cassette by tightening the two bolts (fig. 4). The filter cassette is to be thightened until the sealing strip is compressed to a thickness of about 0.12 inches / 3 mm.

6. Connect the filter unit to electricity.
7. Start the fan and check the pressure drop reading for all three filter cassettes. The pressure gauges should now be in the green sector.

Note! If the supply air has a high content of chips or shavings, inspect and clean the drain opening upstream **of** the return oil tank/pump more often to prevent it from becoming clogged.

Fig.1

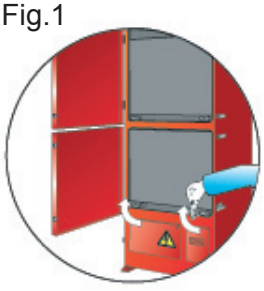


Fig.2

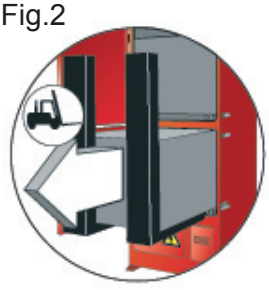


Fig.3

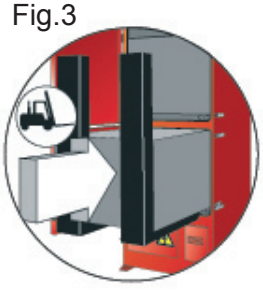
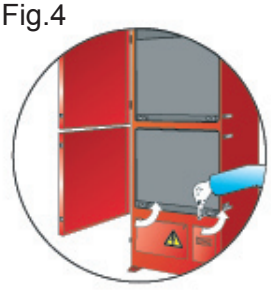


Fig.4



US CA 12. USED FILTER CASSETTES

When the filter cassette is used, it should be washed and the waste liquid taken to destruction.

After washing, the cassette can be pressed together and left for landfill. Alternatively, the cassette can be dismantled and the metal case and aluminium separators can be recycled. Depending on local regulations the filter material can be sent to a disposal facility or incineration.

US CA 13. ACCESSORIES

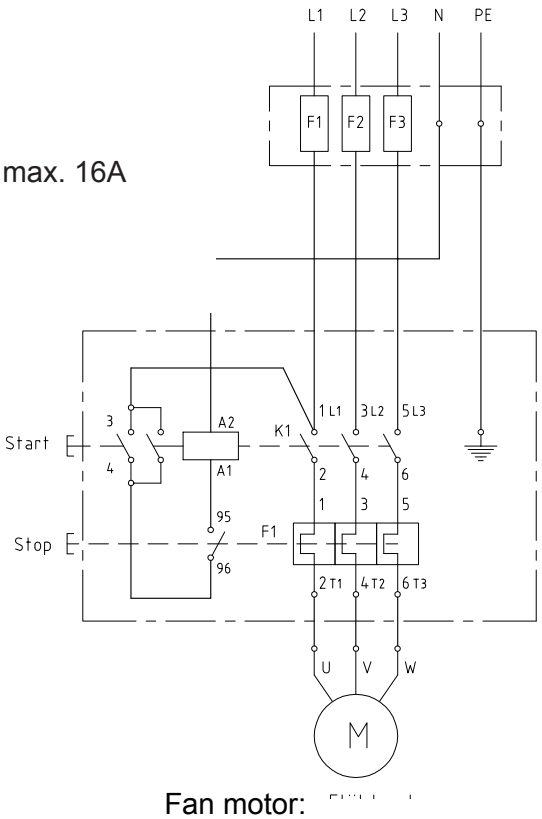
A variety of accessories are available for the Absolent type ODR oil mist and oil smoke filter unit. Instructions for installing these are provided on the next pages. However keep in mind that these products must be ordered separately from us if they are to be included in the delivery.

US CA 13.1 PROTECTIVE MOTOR SWITCH - ODR 2000

Dangerous voltage
All electrical work must be carried out by qualified electricians.

Wiring diagram for the Protective Motor Switch of the ODR 2000

Fuses, max. 16A



Fan motor:
(US) 3.5 hp, 4,6 A (440V, 60Hz)
(CA) 2.6 kW, 4,6 A (440V, 60Hz)

US CA 13.2 Differential Pressure Switch

General
The types DTV-2000 and DTV-5000 Differential pressure switches are designed to indicate a certain pressure drop across the Absolent filter cassettes.

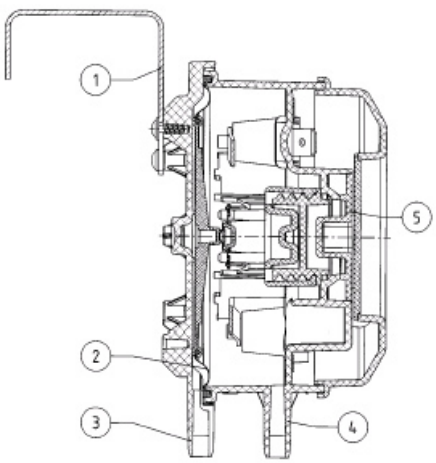
The pressure switch can be equipped with a LED (24V) that lights up when it is time to change the filter cassette. It can also transmit a potential-free signal that can be accessed on the machine operator's computer monitor or be transmitted to a central maintenance department.

Function
The pressure in the tube connected to P1 is compared with the pressure connected to P2. When the differential pressure exceeds the preset set point changeover contact occurs.

A knob behind the cover can be used to preset the set point. The knob setting is visible when the cover is closed.
The factory-preset switching differential is permanent. Installation and service is facilitated in that the cover only has one screw fastener.

Structure
The pressure switch consists of a fibre glass reinforced plastic sensor housing fitted with a diaphragm made of synthetic material. The differential pressure influences the spring-suspended diaphragm which is linked to a changeover contact.

1. Angle bracket
2. Diaphragm
3. High pressure connection, P1
4. Low pressure connection, P2
5. Scale (switching point setting)

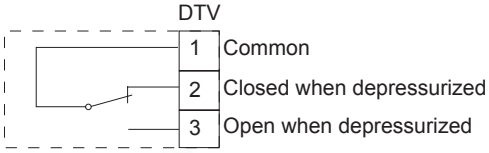


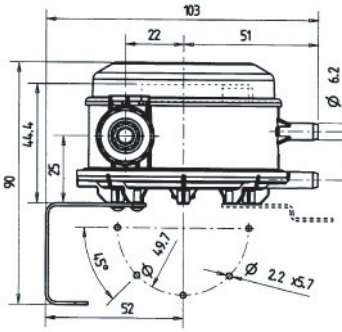
Technical data

Type:	DTV-2000 and DTV-5000
Adjustment range:	DTV-2000:500-2000Pa (ODR2000) DTV-5000:1000-5000Pa
(ODR3000)	
Contact data:	1A, 250 VAC, changeover contacts
Switching differential:	See above
Electrical connections:	Screw terminal, PG11 gland
Ambient temp.:	-20...+85°C
Storing temp.:	-40...+85°C
Max. diff. pressure:	5000 Pa
Pressure connections:	Nipples for hose with female ø6 mm
Material, sensor housing:	Glass fibre reinforced plastic material
Material, diaphragm:	Silicone, LSR
Angle bracket:	Galvanized sheet steel, two 5 mm dia. fastening holes, 40 mm between the centres
Degree of Protection:	IP54
Weight:	0.26 lbs / 0.12 kg
CE:	The product conforms to the provisions of the European LVD Standard IEC669-1 and IEC669-2 and is CE-labelled.

Installation position
Vertical installation is recommended (factory calibrated)

Dimensions and Wiring





P1=High pressure connection
P2=Low pressure connection

US CA 13.3 Liquid Traps

13.3.1 Liquid Trap

The liquid trap is designed for connection to the return oil pipe of the filter unit.

The outlet of the liquid trap should not discharge in such a way that the liquid can damage adjacent building components.

Correct installation of the liquid trap is very important due to the normal sub-atmospheric pressure inside the filter unit.

13.3.2 Liquid Trap Receptacle for ODR 2000

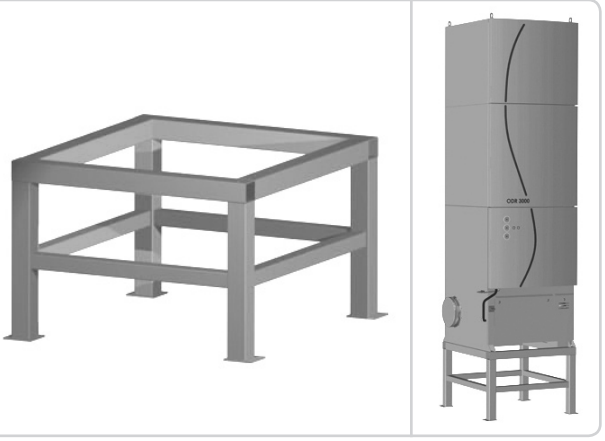
The liquid trap receptacle is designed for connection to the return oil pipe of the filter unit.

Liquid trap receptacle consists of a drain pipe with elbow for connection to the filter unit and a tight translucent receptacle, enabling the operator to see the level of liquid inside it.

US CA 13.4 Extension Frame - ODR 3000

The extension frame is designed for raising the filter unit above ground level, for example for using the liquid trap.

Height: 27.6 in / 700 mm.

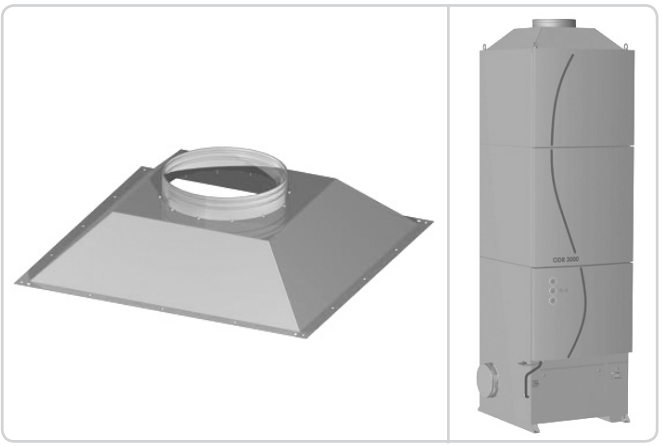


US CA 13.5 Transition Outlet

The outled cover is designed for channel interphase.

Demount the lifting lugs, glue on the sealing strip, place the cover on top of the filter unit and screw it on with the enclosed threaded bolts. Remount the lifting lugs.

Outlet diameter 15.7in / 400mm.



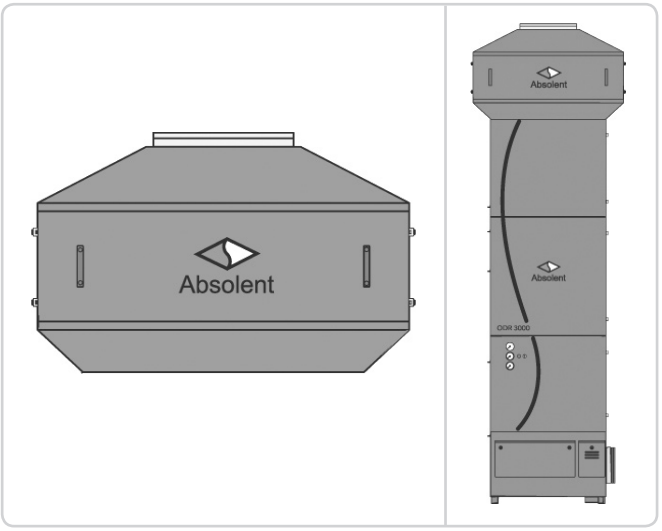
US CA 13.6 Carbon Filter Module

Carbon filter module with 4 carbon cassettes for collection of gases. For mounting, remove the mounting eyes on top of the filter unit, glue the sealing strip onto the top and place the carbon filter box onto the ODR unit. Secure with the enclosed bolts.

The standard carbon filter cassettes (type AFK) contain 34 kg of adsorbent (filter media) each, this makes a total of 136 kg.

Absolent can offer coal filter cassetts with other adsorbents that might be more effective for the actual application's specific smell or gas problem. The cassette can be refilled with new adsorbent when the old is used up.

Outlet diameter: 19.7in / 500mm.



US CA 13.7 Spray System

If the contamination is "too dry" or contains liquid particles with too high viscosity (gooey), the self-cleaning capacity of the filter degrades and the life cycle decreases drastically. To increase the liquid content and / or decrease the viscosity, little drops of liquid are added to the air through a nozzle. The added liquid has to be able to dissolve the contamination. For emulsions, use water.
The nossle is mounted onto the inlet chanel. The spray system is controlled by a time relay with adjustable pause and spray time. For further information about installation, safety and service, see the user's manual for the spray system.

US CA 14. FAULT TRACING

Malfunction	Possible cause	Action
Low capacity (air flow)	The fan rotates in the wrong direction.	Check the fan's direction of rotation (heading 8.3**) - (only skilled personnel).**
	With speed (rpm) regulation: The fan speed (rpm) is set too low.	Check the fan speed (rpm) - **(only skilled personnel).**
	Too high pressure drop over one or more filter cassettes.	Check the pressure drop. If one of the pressure gauges is in the yellow sector, one of the filter cassettes should be replaced (heading 10).
	High pressure drop in the duct system.	Check and possibly change the duct system
	Adjustable damper is closed or incorrectly adjusted.	Check and possibly adjust the damper on the suction pipe between the machine and filter.
	The ducts are not sealed or dirty.	Check that there is no leakage from the suction pipe between the machine and filter. Check that the ducts don't contain dirt.
Abnormally short replacement interval for the HEPA filter:	An incorrectly positioned or damaged sealing strip can result in leakage past filter stages 1, 2. Resulting in unfiltered air reaching the HEPA filter.	Check that filter stages 1, 2 are fitted with the seal upward. Also check that the sealing strip is undamaged.
	Cassettes that are not secured can result in air leakage past the filter cassettes. Unfiltered air will then reached the HEPA filter.	Check that filter stages 1, 2 are secured against the sealing frame correctly (heading 11).
	The filter cassette in stage 1 and/or 2 are not optimised for the application in question.	Check with Absolent that the correct filter cassette is being used in filter stage 1, 2 for the application in question.
Abnormally short service interval for the prefilter:	The filter cassette in stage 1 and/or 2 are not optimised for the application in question.	Check with Absolent that the correct field cassette is being used in filter stage 1 and/or 2 for the application in question.
	The filter cassettes have become clogged on account of high viscosity in the oil mist, which gives insufficient drainage.	If emulsions are used, filter clogging may be due to the filter running when production has stopped, which dries out the filter cassette (water evaporates). Consequently, switch off the filter unit when not in use. If the fluid in the process has a high viscosity, it is necessary to apply fluid with a spray system (heading 12).
	The filter cassettes have become clogged.	Check that chips have not been drawn down with the air into the filter unit. The problem with chips can be solved by calibrating the air flow or coarse filtering before the filter unit. Also check that sticky particles have not clogged filter stage no. 1 (for example, in foundry applications). Contact Absolent for appropriate measures.

US CA 15. SPARE PARTS

Absolent has a complete range of spare parts, which ensure the operation of installations.

Please supply the filter unit's serial number and the part number in order to guarantee delivery of the correct spare parts. These can be found on the machine plate, which is located on the right-hand side of the unit. See figure 1.

When ordering filter cassettes, the above details should be supplemented with the filter cassette's material code. This can be read on the filter cassette's rating plate by "type". See figure 2.

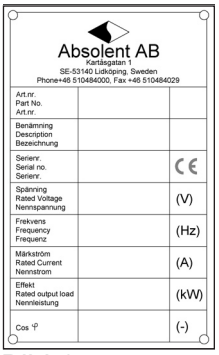


Bild 1

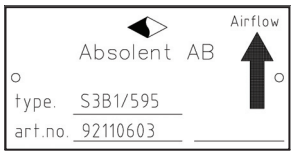


Bild 2

US CA 16. TECHNICAL SUPPORT

Absolent has a complete range of spare parts, which give full service, and ensure the operation of installations. In the event of questions concerning maintenance and spare parts please contact:

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Kartåsgatan 1
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Tel +46 (0)510 484000
Fax +46 (0)510 484029
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www.absolent.com

Dealer: